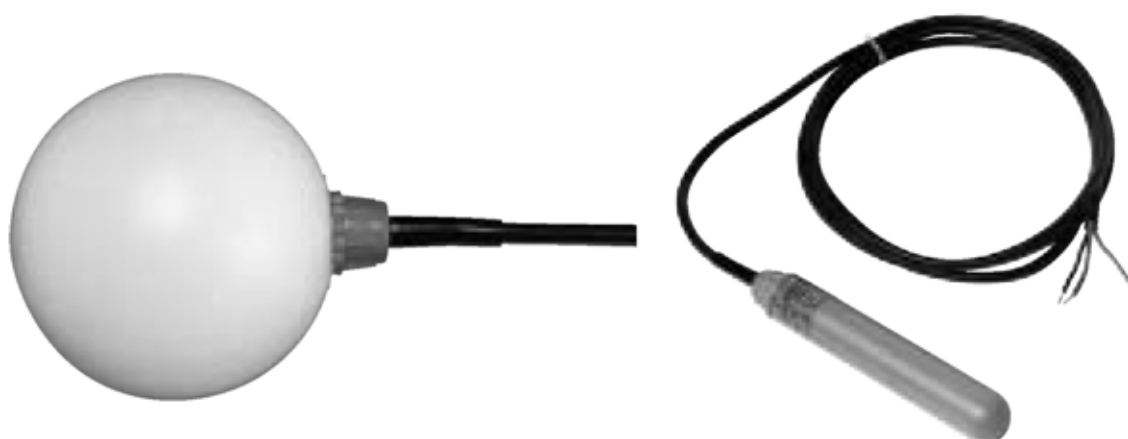




# **Operating Instructions for Float Switches for Liquids**

**Model: NSP**



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## **2. Note**

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Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EWG-machine guidelines.

## **3. Instrument Inspection**

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Instruments are inspected before shipping and sent out in perfect condition.

Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

### **Scope of delivery:**

The standard delivery includes:

- Float Switches for Liquids                      model: NSP
- Operating Instructions

All the parts, which are standard scope of delivery, are included in the assembled unit. The accessory parts such as terminal connections and ballast weight are separately packed.

## **4. Regulation Use**

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Any use of the Float Switch for Liquids, model: NSP, which exceeds the manufacturers specification, may invalidate its warranty. Therefore any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

The model NSP are used to monitor liquid-levels. Only those liquids may be measured, against which the materials used in the construction of the unit are resistant.

By making use of two float switches, one for the minimum level and one for the maximum level, liquid-level control for a system can be implemented.

## 5. Operating Principle

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The float comprises a hollow cylinder or a ball with integrated mercury switch or microswitch.

The contact is supplied as a changeover contact; it can be connected as a N/O contact or N/C contact as an option. The contact switches when the liquid passes above or below the horizontal float position.

The switch point is set by the side installation of the switch at the desired position or by clamping the cable. The switch point is set using weights when installed at the top.

## 6. Mechanical Connection

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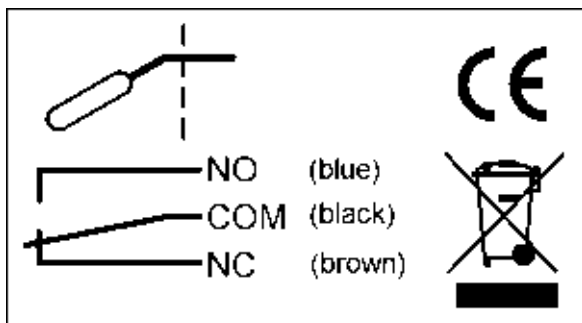
### **Before installation:**

- Ensure that the permitted maximum pressure and temperature defined for the unit are not exceeded. (see 9. Technical Information).
- **With open tanks** the float switch should be lowered into the tank from the top. The cable should be firmly held through a suitable cable-grip. Firm placement of the float switch is carried out through ballast-weight, or cable-clamps on a guide-pipe where a cable length of 50 mm between the clamp and the float has to be considered.
- **With closed, pressure-less tanks**, installation of float-switch is carried out by means of a threaded cable gland, with R1 screw-in thread (accessory), side-wise and through the wall.

In order that the float-switch may not be obstructed during its float-movement, at least 50 mm cable-length between retaining-grip and the float-switch must be allowed.

## 7. Electrical Connection

- Ensure that the supply lines are powerless.
- Connect the supply lines corresponding to desired switching function, with the float switch cable.
- The cable-junction should be made through a suitable connection-socket and be protected against physical contact and moisture.



**Attention! If there are any doubts regarding compliance to electrical specifications, or any probable danger arising through physical contact, in case of a rupture, a fault-current protection is recommended against indirect touching according to EN 50178.**

After connecting external units with limit-contacts, all connection-work is complete. The unit can now be put in operation.

## 8. Maintenance

This float switch is almost a maintenance-free unit. Occasionally, the cable should be inspected for damage. A float switch with damaged cable must be immediately replaced.

## 9. Technical Information

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Float material:	polypropylene
Cable:	standard 4 m TPK cable (3 x 0.75mm <sup>2</sup> , thermoplastic rubber) optional: silicone, FEP cable
Max. pressure:	model NSP-S: 1 bar model NSP-K: 2 bar
Max. temperature:	5...60 °C (TPK cable) 5...85 °C (silicone-/ FEP cable)
Medium density:	model NSP-S: > 0.9 kg/ dm <sup>3</sup> model NSP-K: > 0.6 kg/ dm <sup>3</sup>
Contact:	changeover contact, connectable as N/C or N/O contact
Switch capacity:	max. 250 V <sub>AC</sub> / 150 V <sub>DC</sub> , 300 VA, 60 W 1 mA...1,5 A, 1 A at cos φ 0,7
Switching Hysteresis:	approx. 25 mm (TPK) approx. 35 mm (FEP)
switching angle:	approx. +12° / +3°
Class of protection:	IP 68

## 10. Order Codes

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**Order details** (Example: **NSP-S W 04TPK**)

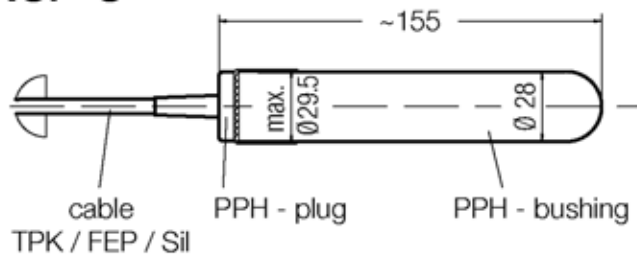
Model	Design	Contact	Cable
<b>NSP-</b>	<b>S</b> = Stem form <b>K</b> = Ball form	<b>W</b> = changeover contact	<b>04TPK</b> = 4 m TPK-cable <b>YYSil</b> = Silicone cable, min. 2 m <b>YYFEP</b> = FEP-cable, min. 2 m

**Order details** (Example: **NSP-weights**)

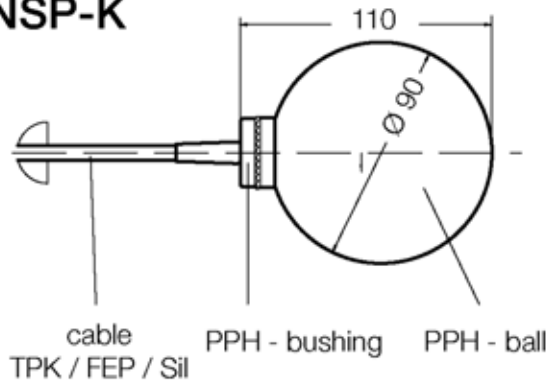
Model	Description
<b>NSP-weights</b>	Bading weights
<b>NSP-connection 1 PVC</b>	PVC-cable gland G1
<b>NSP-connection 2 PVC</b>	PVC-cable gland G2
<b>NSP-connection 1 MS</b>	Brass cable gland G1

## 11. Dimensions

### NSP-S



### NSP-K



## 12. Recommended Parts

The float switch can be replaced only as a complete unit.

## 13. Declaration of Conformance

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We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

**Float Switches for Liquids      Model: NSP-...**

which relates to this certificate, conforms to the standards listed below:

**EN 61010**  
**EN 61326**


Following EWG guidelines are also fulfilled:

**73/23 EWG**  
**89/336/EWG**  
**93/68 EWG**

Hofheim, 15. March 2006



H. Peters  
General Manager



M. Wenzel  
Proxy Holder